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5 AUTOMOTIVE IGNITION MONITORING SYSTEM
 WITH MISFIRE AND FOULED PLUG DETECTION

Abstract Of The Disclosure

 An automotive ignition diagnostic system includes an ion current
detection circuit producing a buffered representation of an ion current flowing
10 across an electrode gap of an ignition plug in response to a bias voltage applied
thereto. An ignition diagnostic circuit is responsive to the buffered representation
of the ion current to charge a single integration capacitor. The diagnostic circuit
is operable to produce an output signal having a pulse width defined by the
amount of charge on the capacitor. When the ion current flows following a
15 combustion event, the width of the output signal is controlled as a function of the
quality of combustion in the corresponding cylinder. However, if sufficient ion
current flows prior to combustion, the width of the output signal is controlled to
indicate a fouled ignition plug.